

Site Big River
ID# 40086126899
Break. 1.8
Other: 8 S1

Reference
11

SOIL SURVEY OF

0702

ST. FRANCOIS COUNTY, MISSOURI

40108717



SUPERFUND RECORDS

United States Department of Agriculture
Soil Conservation Service and
Forest Service
In Cooperation with
Missouri Agricultural Experiment Station



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Issued August 1981

Soil survey of St. Francois County, Missouri

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United States Department of Agriculture
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St. Francois County is in the east central part of Missouri on the eastern fringe of the Ozark region. In area the county is 292,480 acres or about 457 square miles. It is shaped roughly like a triangle. Its western border is about 29 miles long and its southern border is 29 miles wide. St. Francois County is bordered on the north by Jefferson County, on the east by Ste. Genevieve County, on the south by Madison County, on the southwest by Iron County, and on the northwest by Washington County. Farmington is the county seat. In 1970 the population of the county was 36,875.

Surface features of the county are mainly determined by differences in geological structures surrounding the Ozark Dome. About 20 percent of the county is made up of the St. Francois Mountains where soils formed in residuum of igneous rocks. Another 52 percent of the county is on the Farmington Plain where the soils are underlain by sandstone and dolomite. The remaining 28 percent of the area is on the old surface and the dissected topography of the Salem Plateau, where the major soil material is red cherty clay.

The highest elevation is 1,650 feet on Brown Mountain near the southwest corner of the county. The main watershed divide runs from northeast to southwest through the middle of the county. The Big River flows through the northern part of the county in a general

northerly course and the St. Francis River flows across the lower part of the county in a southerly direction. The lowest elevation in the county is approximately 565 feet where Big River leaves the county in the northwest corner.

general nature of the survey area

In this section climate history and development and physiography and geology are discussed.

climate

St. Francois County is hot in summer especially at low elevations and moderately cool in winter especially on mountains and high hills. Rainfall is fairly heavy and well distributed throughout the year. Snow falls nearly every winter but snow cover lasts only a few days at a time.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Farmington, Missouri, in the period 1951 to 1974. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 35 degrees F and the average daily minimum temperature is 24 degrees. The lowest temperature on record which occurred at Farmington on January 14 1964 is 20 degrees. In summer the average temperature is 75 degrees and the average daily maximum temperature is 88 degrees. The highest recorded temperature which occurred on July 14 1954 is 108 degrees.

Growing degree days are shown in table 1. They are equivalent to 'heat units'. During the month growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

Of the total annual precipitation 23 inches or 60 percent usually falls in April through September which includes the growing season for most crops. In 2 years out of 10 the rainfall in April through September is less than 18 inches. The heaviest 1 day rainfall during the period of record was 4.95 inches at Farmington on June 30 1957. Thunderstorms occur on about 50 days each year and most occur in summer.

Average seasonal snowfall is 12 inches. The greatest snow depth at any one time during the period of record was 17 inches. On an average 5 days have at least 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 70 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the south. Average windspeed is highest 12 miles per hour in March.

history and development

Early inhabitants of St. Francois County were agricultural village dwellers of the Mississippian culture (15). Small mounds along the valleys of the Big River and the St. Francis River are mute reminders of these people. Later the Osage Indians roamed this area of the state. European settlement began in the late 1700's.

St. Francois County was first under French dominance as part of the Louisiana Territory, a French holding. France sold the territory to the United States as a part of the Louisiana Purchase in 1803.

The first communities Murphy Settlement, Cook Settlement, and Alley's Mines, were established prior to 1803. These communities were mainly agricultural. Murphy Settlement, later named Farmington, was started about 1800 when William Murphy, a Baptist minister from Tennessee, built a log cabin. He chose the deep red (Cnder) soils on the rolling Farmington Plain where a magnificent forest testified to the productivity of the soils. Cook settlement, near the present community of Libertyville, grew up in a similar manner. The area was

chosen by Nathaniel Cook who came from Scott County Kentucky in about 1797. Alley's Mines was located on or near Big River. It was named for Thomas Alley who discovered and developed the lead mine there.

St. Francois became a county in 1821 the same year Missouri gained statehood. St. Francois was formed from parts of three other counties already established—Jefferson, Ste. Genevieve and Washington.

Mining played an important part in the development of the county. Towns such as Bonne Terre, Flat River, Desloge and Iron Mountain were established in rich mining areas. All of these with the exception of Iron Mountain were the sites of very rich lead deposits. Bonne Terre meaning 'good earth' was the name given to the area's lead containing clay by the miners. Iron Mountain was first believed to be a mountain of pure iron by the Spanish. Presently there are no active lead or iron mines in the county.

The 'Old Plank Road' running from Ste. Genevieve to Iron Mountain was the first improved road in Missouri (17). This road was built of heavy timbers laid down lengthwise on which 8 foot oak planks were nailed crosswise. Wagons containing iron from Iron Mountain and Pilot Knob were pulled by oxen, horses and mules east to the river and on the return trip brought back freight and supplies. Repairs of the Old Plank Road ceased about 1857 the year the St. Louis and Iron Mountain Railroad was built.

Most of the early settlers came in search of productive soils to farm (fig. 1). Their first task was to clear the land for cultivation. Trees were cut, burned, split into rails or used to construct log houses and barns. Fields were planted to corn, cotton, tobacco and garden vegetables. Livestock required little attention. Horses, cattle, mules and hogs were turned out on open range to graze. Open grazing continued until about 1920.

Farming expanded throughout the rolling plain between Farmington and Libertyville and to the creeks and river valleys beyond. By 1978 about 50 percent of the county had been cleared and was being used for pasture, hay, and corn.

Despite a decline in cropland acreage, yields of most crops have steadily increased. About 19,200 acres of corn was harvested in St. Francois County in 1932 (6). Two years later in 1934 the amount of land in corn declined to 8,800 acres and it dropped to 1,700 acres in 1964. In 1977, this figure rose to 2,600 acres. The yield of corn on the other hand averaged 20.5 bushels per acre in 1928, 40 bushels per acre in 1946 and 85.2 bushels per acre in 1975.

The acreage of land in wheat has also declined rather steadily from 16,900 acres in 1919 to 900 acres in 1977. Yields of wheat have risen more slowly than corn yields from 14.5 bushels per acre in 1928 to 14.9 bushels per acre in 1946 and 34.3 bushels per acre in 1975.

Oats, a major crop of 93,200 acres in 1928, has dropped during the last 20 years to only a few hundred acres per year. Soybeans introduced in the early 1940's

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Sheet #13

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S1 FRANCOIS COUNTY MISSOURI



Sheet #13

Sheet #13

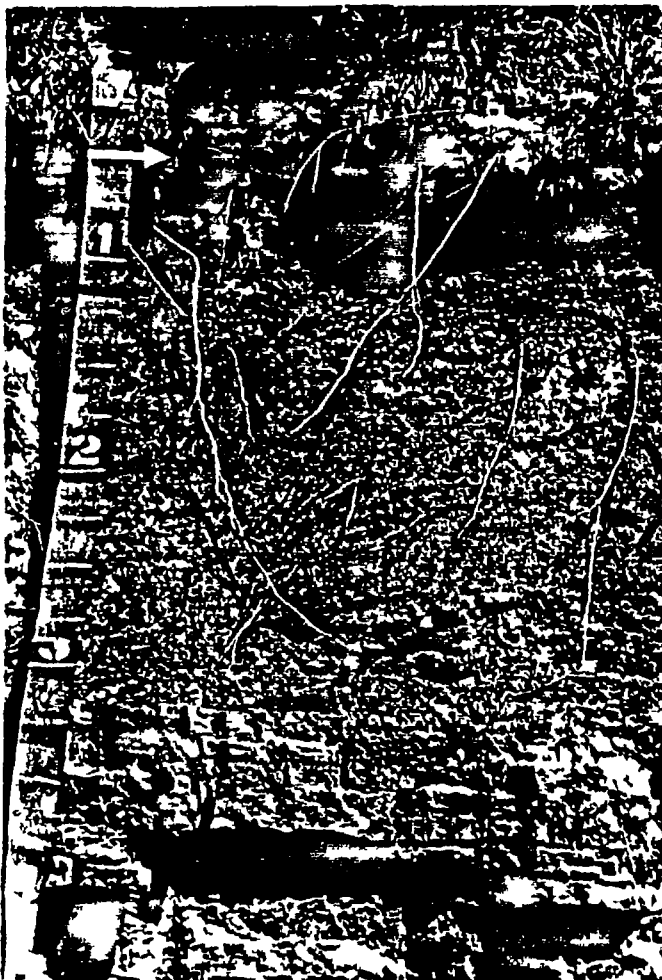


Figure 11—The major restriction for use and management of the Caneyville soils is underlying bedrock that limits rooting depth and available water capacity. Depth is shown in feet.

erosion is a hazard. Minimum tillage, crop rotation, contouring, and returning crop residue to the soil are practices that reduce runoff and erosion. Terrace systems are applicable to some fields.

This soil is used for hay and pasture. Pastureland and hayland are effective uses in controlling erosion. Overgrazing and grazing when the soil is too wet, however, cause surface compaction, excessive runoff, and poor tilth. Proper stocking, pasture rotation, timely deferment of grazing, and restriction on grazing during wet periods help to keep the pasture and the soil in good condition. Common cool season grasses tend to become dormant during the dry hot summers. Native warm season grasses are better able to reserve moisture for midsummer growth.

This soil is suited to trees, but only a few small areas remain in native hardwoods. Seedling mortality is

moderate. Using special planting stock of a larger size than usual may be necessary to improve the survival in a stand. There are no other significant limitations to growing or harvesting trees.

This soil is suited to dwellings with basements, but depth to bedrock and shrink swell potential are moderate limitations. These limitations can be overcome by constructing foundations above ground level or partly below and by reinforcing foundations. This soil does not have sufficient strength to support vehicular traffic, but this limitation can be overcome by adding suitable base material.

The soil is generally unsuitable for septic tank absorption fields because of the moderately slow permeability and the moderate depth to bedrock. The construction of sewage lagoons requires borrowing soil or ripping or blasting because of the moderate depth to bedrock. Sealant for the bottom of the lagoon may be needed to prevent excess seepage into fractures in the bedrock.

This map unit is in capability subclass J1le and woodland ordination group 4c.

12C—Caneyville silt loam, 5 to 9 percent slopes.

This moderately deep, moderately sloping, well drained soil is on upland side slopes, point ridges, and slopes above draws and drainageways. Long, irregularly shaped lobes are common. Individual areas range from 50 acres to several hundred acres.

Typically, the surface layer is dark brown silt loam about 7 inches thick. The subsoil is about 24 inches thick. The upper part of the subsoil is reddish brown, firm silty clay loam, and the lower part is dark reddish brown, firm silty clay and clay. Gray, hard bedded dolomite is below the subsoil. In places, most or all of the original surface layer has eroded. In a few places, the soil is more than 40 inches to bedrock.

Included with this soil in mapping are a few small areas of shallow Gasconade soils. A few sinks are present near Desloge. Also included in mapping are wet gray soils that occur as seeps, wet spots, or narrow bands where thin layers of shale outcrop on slopes. These soils make up about 15 percent of the map unit.

Permeability is moderately slow, and surface runoff is medium. Available water capacity is low. Reaction ranges from medium acid to mildly alkaline. Natural fertility is medium, and the organic matter content is moderately low. Rooting depth is restricted by dolomite or dolomitic limestone bedrock.

This soil is used mainly for hay, pasture, and trees. Pastureland and hayland are effective uses in controlling erosion. Overgrazing and grazing when the soil is wet, however, cause compaction, excess runoff, and poor tilth. Proper stocking, pasture rotation, timely deferment of grazing, and restriction on grazing during wet periods help to keep the pasture and the soil in good condition. Native grasses are the best suited to pasture and hay.

This Caneyville soil is suited to trees, but only a few small wooded areas remain. Trees are commonly

eastern redcedar and upland oaks. In areas having trees or sparse tree cover, soils are generally stony, flaggy and shallow. Seedling mortality is moderate. Using special planting stock of a larger size than usual may be necessary to improve the survival rate in a stand. There are no other significant limitations to growing or harvesting trees. However, expected yields are only fair to poor.

This soil is suited to soybeans and corn, but it is better suited to grain sorghum and small grains. Grain sorghum withstands drought better than other row crops. Small grains, which grow in the cooler seasons, have more soil moisture available than do row crops, which grow in the hotter part of the year. Corn is not grown extensively on this Caneyville soil. When it is grown, it can be planted early and an early maturing variety can be used to avoid as much of the late dry summer as possible. Moisture loss and soil loss can be reduced by no-till practices. If this soil is used for cultivated crops, which require more tillage than grain sorghum and small grains, erosion is a severe hazard. Minimum tillage, terrace systems, contouring, crop rotation, and returning crop residue to the soil help reduce runoff and erosion.

This soil is suited to buildings without basements, but depth to bedrock and shrink-swell potential are moderate limitations. These limitations can be overcome by constructing dwellings above ground level or partly below and by reinforcing foundations. This soil does not have sufficient strength to support vehicular traffic, but this limitation can be corrected by adding suitable base material.

This soil is generally unsuitable for use as septic tank absorption fields because of the moderately slow permeability and the moderate depth to bedrock. The construction of sewage lagoons may require borrowing soil or difficult nipping or blasting because of the moderate depth to bedrock. Sealant for the bottom of the lagoon may be needed to prevent excess seepage into the bedrock.

This map unit is in capability subclass IVe and woodland ordination group 4c.

12D—Caneyville silt loam, 9 to 14 percent slopes

This moderately deep, strongly sloping, well-drained soil is on upland side slopes bordering draws, branches, and creek bottoms. Individual areas are commonly long and narrow and range from 10 to 200 acres.

Typically, the surface layer is dark brown silt loam about 5 inches thick. The subsoil is dark reddish brown silty clay and reddish brown and dark yellowish brown clay. Bedded dolomite is below the subsoil. In a few places the soil is more than 40 inches deep to bedrock, and in some spots the soil has a lighter colored surface layer. In many places the subsoil is brown.

Included with this soil in mapping are some small stony areas amounting to about 10 percent of the map unit.

Permeability is moderately slow, and surface runoff is medium. Available water capacity is low. Reaction

ranges from medium acid to mildly alkaline throughout the profile. Natural fertility is medium, and organic matter content is moderately low. Root development is restricted by dolomite or dolomitic limestone bedrock.

Most areas are used for pasture, hay, and trees. Most wooded areas are grazed. This soil is generally unsuitable for cultivated crops because of droughtiness and the hazard of erosion.

Pasture and hayland provide adequate cover to control erosion if properly managed. Overgrazing and grazing when the soil is wet cause surface compaction, excessive runoff, and poor tilth. Proper stocking, pasture rotation, timely deferment of grazing, and restriction on use during wet periods help to keep the pasture and the soil in good condition. Native grasses such as big bluestem, indiangrass, and switchgrass grow better and provide better cover during the summer than most common grasses.

This soil is suited to trees, and nearly one-half of the acreage remains in native hardwoods. Seedling mortality is moderate. Using a special planting stock of a larger size than usual may be necessary to improve the survival rate. There are no other significant limitations to growing or harvesting trees. However, production is low except where bedrock fractures provide additional rooting depth.

This soil is generally unsuitable for most sanitary facilities, building site development, and roads because of the steepness of slope and the depth to bedrock. The moderate depth limits the soil's suitability for water impoundment. A foot or more of soil material should be left above bedrock to reduce seepage. Areas that have sinks should not be used for water impoundment.

This map unit is in capability subclass VIe and woodland ordination group 4c.

13E—Caneyville stony silt loam, 14 to 20 percent slopes This moderately deep, moderately steep, well-drained soil is on somewhat elongated upland side slopes or V-shaped draws. Individual areas range from 20 to 100 acres.

Typically, the surface layer is dark brown stony silt loam about 7 inches thick. Stones make up about 0.1 to 1 percent of the surface layer. The subsoil is reddish brown and yellowish brown silty clay and is underlain by bedded dolomite at about 31 inches. The dolomite surface is irregular, and depth to bedrock varies within short distances.

Included with this soil in mapping are areas of shallow Gasconade soils. These soils make up about 15 percent of the map unit.

Permeability is moderately slow, and surface runoff is rapid. Available water capacity is low. Reaction ranges from medium acid to mildly alkaline. Natural fertility is medium, and organic matter content is moderately low. Root development is restricted by dolomite or dolomitic limestone bedrock.

This soil is used for trees and pasture. The soil is suitable for pasture, an effective use in controlling

This soil is suited to both native hardwood trees and shortleaf pine. Rooting depth is limited by the fragipan, and there is a slight windthrow hazard depending on the thickness of the soil above the fragipan. Harvesting mature trees eliminates those most susceptible to windthrow. Surface stoniness is a moderate limitation to the use of tree planting equipment. In some areas it may be necessary to plant seedlings by hand or use direct seeding.

This soil is suitable for building site development and onsite waste disposal if structures are properly designed and installed. Dry basements can be maintained if excess water is drained and the basement walls are adequately sealed. Low strength and poor stability for vehicular traffic can be corrected by strengthening or replacing the base material. This soil is generally unsuitable for septic tank absorption fields because of

very slow permeability and seasonal wetness. Slope is a limitation for sewage lagoons but can be overcome by careful site selection and proper design and construction. Sites can be graded to modify the slope.

This map unit is in capability subclass VIe and woodland ordination group 4x.

18—Dumps, mines This miscellaneous area consists of chat dumps of dolomitic material that was crushed to gravelly coarse sand during lead mining. The dumps are very steep (slopes ranging from about 20 to 50 percent) white dome shaped hills that are 50 to 250 feet high and 30 to more than 100 acres (fig. 13).

This excessively drained dolomitic material does not show any significant alteration by weathering. It is gray, grayish brown, or light brownish gray coarse sand or fine

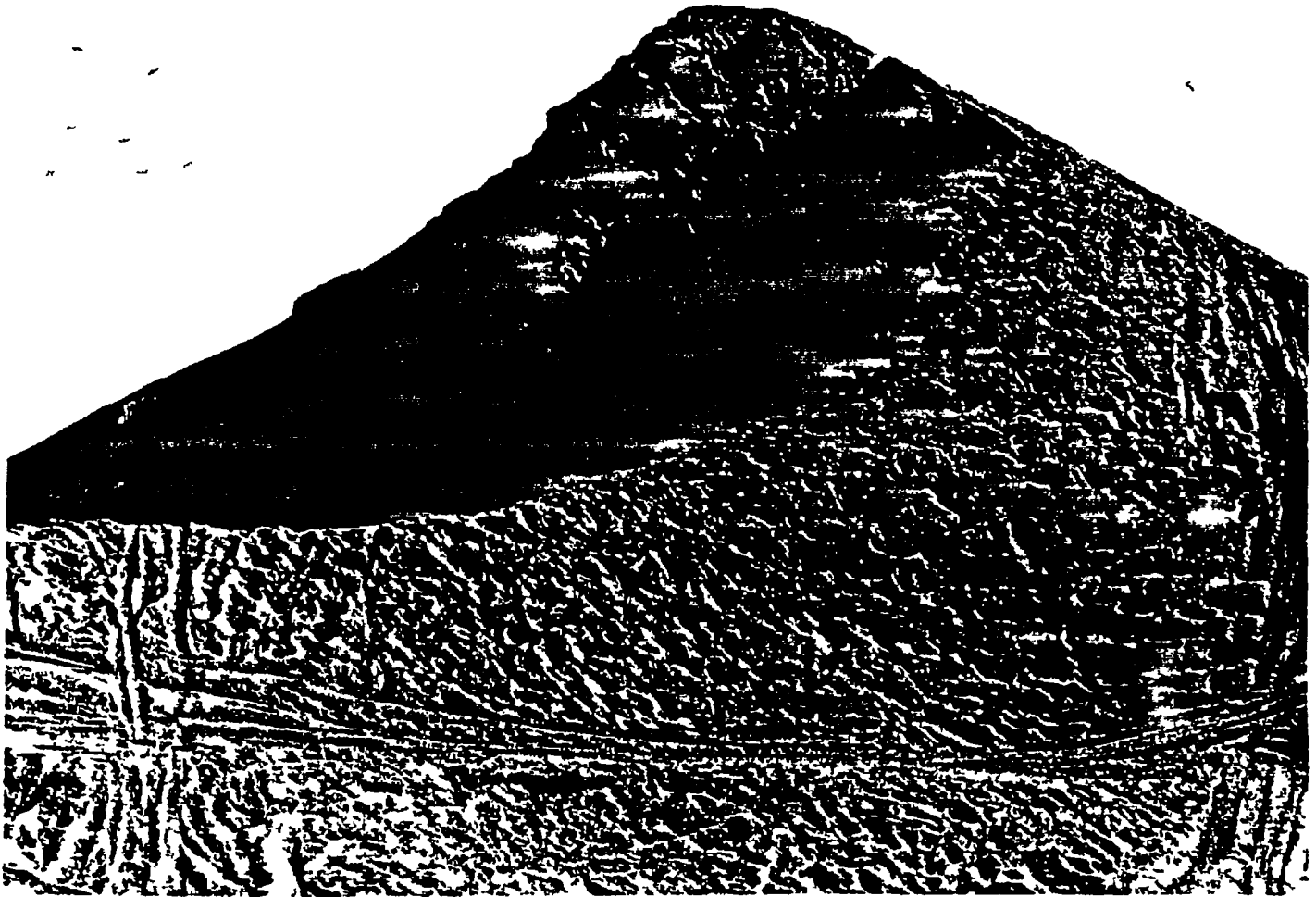


Figure 13—The chat dumps are unique manmade landforms reminders of early lead mining in the county.

gravel (2 to 10 millimeters in diameter) It is similar to Psammments 0 to 9 percent slopes however it is much steeper and more droughty and does not support vegetation

Permeability is very rapid and even though the dolomitic material is very steep most precipitation is absorbed into the surface Available water capacity is very low The material is mildly or moderately alkaline throughout and effervesces when treated with dilute hydrochloric acid It does not have a sufficient balance of nutrients to support plants Organic matter content is very low or essentially nonexistent

This material is used as a source of agricultural lime (fine portion) road material (coarse portion), asphalt mix, and fill material It has long been a distinctive landmark of the old "Lead Belt Area," which has gained some measure of esthetic value It captures the attention of travelers both on the ground and in the air In recent years some dumps have been used as recreation areas for off the-road vehicles and hikers and as launching sites for hang gliders Small communication towers are on the summit of several dumps

In their present condition these areas have no apparent potential for supporting plants Slight drifting and blowing of dust is difficult to overcome without major and costly reclamation The dolomitic material is not suitable for building sites and sanitary facilities because of the steepness of slopes The material when leveled is stable and suitable for building sites It is a source of sand but needs screening to separate excess fines

This map unit is not assigned to interpretive groupings

19A—Elsah silt loam, 0 to 3 percent slopes This deep nearly level well drained soil is on narrow branch and creek bottoms It is subject to frequent flooding Individual areas of this map unit are commonly long narrow strips that range in size from 20 to more than 200 acres

Typically the surface layer is very dark grayish brown silt loam about 6 inches thick A transition layer below that is brown silt loam about 12 inches thick The substratum to a depth of 60 inches or more is brown and yellowish brown very cherty loam In some places the dark surface layer is more than 10 inches thick Also, in some areas the depth to cherty alluvium is more than 24 inches Some areas contain more sand

Included in mapping and making up about 15 percent of the map unit are areas of the somewhat excessively drained cherty Midco soils and a few small areas of the well drained Ashton soils Midco soils are adjacent to the stream channel and Ashton soils are on high bottoms or foot slopes

Permeability is moderate in the upper 18 inches and moderately rapid in the lower part of the profile Surface runoff is slow Frequent very brief periods of flooding occur in winter and spring Available water capacity is moderate Reaction ranges from neutral to medium acid Natural fertility is medium and organic matter content is

moderately low The surface is friable and easily tilled Root development is restricted slightly by the cherty substratum

Most areas of this soil are cleared and used for pasture Only a small acreage is cultivated This soil is suited to corn soybeans small grain grasses and legumes but is subject to flooding and droughtiness The hazard of flooding is most severe in early spring Cleaning the stream channel of obstructions and using dikes levees, and diversions help prevent excess flooding and scouring Returning crop residues to the soil or adding other organic material on a regular basis help to improve fertility reduce crusting and increase water infiltration Pasture can be kept in good condition by proper stocking, pasture rotation and timely deferment of grazing

This soil is suited to trees and a few areas remain in native hardwoods Plant competition and seedling mortality are moderate Tree seeds cuttings and seedlings survive and grow well if competing vegetation is controlled or removed This can be accomplished by site preparation by prescribed burning or by spraying or cutting Using special planting stock of a larger size than usual may be necessary to improve the survival rate

This soil generally is not suited to building site development or to onsite waste disposal because of the flooding hazard This can be partly overcome by the use of dikes levees or by filling

This map unit is in capability subclass IIs and woodland ordination group 3f

20C—Fourche silt loam, 5 to 9 percent slopes This deep moderately sloping moderately well drained soil is on side slopes points and some rounded ridgetops Areas are irregular in shape and range from 20 to several hundred acres in size

Typically the surface layer is brown silt loam about 7 inches thick The subsoil to about 60 inches is yellowish brown silt loam and brown silty clay loam in the upper part yellowish red silty clay loam in the middle part and yellowish red and strong brown mottled silty clay in the lower part In places, the surface layer is silty clay loam because severe erosion has removed most or all of the original topsoil In some places the depth to bedrock is less than 60 inches

Included with the soil in mapping are small areas of the moderately deep Caneyville soils, which make up about 10 percent of the unit

Permeability is moderately slow and runoff is medium Available water capacity is high Reaction in the upper part of the subsoil is very strongly acid to medium acid but in the lower part it ranges from very strongly acid to mildly alkaline Reaction in the surface layer varies widely as a result of erosion and local liming practices The surface layer is friable and easily tilled, but tillage and other farming practices may be delayed from several days to two weeks by numerous seepy spots and by a seasonal high water table which is at a depth of 1.5 to 3

being restored and planted to trees or grasses. Stony uneven areas generally are unsuitable for most farming purposes. In most areas Orthents have a fair potential for trees and wildlife habitat. Limitations for building site development are severe and can be overcome only by major landscaping and reclamation of the site.

This map unit is not assigned to an interpretive grouping.

36C—Psammments, sloping This map unit consists of deep nearly level to gently rolling somewhat excessively drained, newly formed soil on low slopes and in tailing ponds. Individual areas are commonly somewhat oval or irregular in shape and are large. Most of the acreage is in only a few areas ranging from about 400 to more than 1,000 acres. A few small areas are scattered in the vicinity of the large areas. These soils are formed in crushed dolomitic material from lead mining.

Typically the surface layer is brown loamy fine sand about 1 inch thick. Below this is a thin transitional layer of pale brown loamy fine sand about 1 inch thick. The underlying material is light gray loamy fine sand stratified by thin lenses of light brownish gray silt loam or very fine sandy loam amounting to about 10 percent of the mass. It extends to 60 inches or more and is mildly alkaline throughout.

Permeability is rapid, and surface runoff is slow to medium although most precipitation is absorbed into the surface. The available water capacity is low. Reaction is mildly or moderately alkaline throughout. The natural fertility is very unbalanced and careful fertilization is required to make the soil more suitable for plant growth. The organic matter content is very low. Some areas of the tailing ponds are subject to frequent flooding.

Most areas of these soils have essentially been abandoned since mining ceased. Some areas have been seeded to grasses and legumes but results are poor. These soils are generally unsuitable to growing grasses, shrubs and trees unless intensively managed. The most important need in managing the soil is to establish a vegetative cover. This may be done by assuring adequate available moisture, carefully selecting plants, balancing fertility and protecting the soil from blowing. Moisture conservation practices or sprinkler irrigation are also helpful. Plants that require or tolerate soil that is alkaline and contains lime should be chosen. Fertilizer needs include nitrogen, phosphates, potash and possibly some trace elements. Temporary operations such as rough tillage or mulching may be adequate to protect young plants from abrasion by blowing soil.

Because it is very difficult to establish any kind of vegetative cover, there is a lack of essential wildlife habitat elements such as food, water and cover. Once cover is established, wildlife potential can improve.

Most of the acreage is not suited to recreation uses because of flooding. In areas not subject to flooding the sandy textures and blowing are limitations. Vegetative cover is essential for areas used for camping, picnicking

and playgrounds. Spreading a thin layer of topsoil may be necessary to assure vegetation of critical areas.

These soils are generally unsuitable for building site development and onsite waste disposal because of the hazard of flooding. Areas free of the flooding hazard are suitable for building sites. Rapid permeability may allow effluent from sanitary facilities to contaminate ground water. Detailed onsite investigation is needed in any area considered for building sites.

This map unit is not assigned to interpretive groupings.

37E—Ramsey very stony sandy loam, 14 to 35 percent slopes This shallow moderately steep and steep, somewhat excessively drained soil is on side slopes. Individual areas of this map unit are irregular in shape and range from 20 to several hundred acres in size.

Typically the surface layer is very dark grayish brown very stony sandy loam about 2 inches thick. A brown sandy loam subsurface layer is about 3 inches thick. The subsoil is strong brown cobbly sandy loam and is underlain by hard sandstone at 16 inches. Some areas are not stony.

Included with this soil in mapping and making up about 10 percent of the map unit are moderately deep well drained Lily soils which are on foot slopes, benches and lesser slopes.

Permeability and runoff are rapid and available water capacity is very low. Organic matter content and natural fertility are both low. Reaction in the subsoil is very strongly acid or strongly acid. Rooting depth is 7 to 20 inches and is limited by sandstone except for occasional fractures in the bedrock.

Most areas of this soil are in timber. A few areas are cleared and used for pasture. This soil is suited to trees but production is low. Intensive timber management is not common because erosion hazard, equipment limitations and windthrow hazard are severe. Droughtiness and low fertility are also limitations that cannot easily be overcome. Planting seedlings on north and east slopes helps overcome the drying effect of aspect. The erosion hazard and equipment limitations can be partly overcome by careful selection, preparation, and maintenance of roads and skidding trails. Timely harvesting of mature trees limits windthrow.

Some of the less stony and less steep areas are used for pasture. This Ramsey soil is suited to some grasses and legumes. It is droughty because of low available water capacity and water loss by runoff. Maintaining an adequate vegetative cover helps to prevent excessive soil loss and reduce runoff. Overstocking and overgrazing reduce the protective cover and increase runoff and erosion. Native grasses are desirable for summer grazing. Proper stocking, uniform grazing distribution, timely deferment of grazing and a planned grazing system help to keep the pasture and the soil in good condition. Some areas are suitable for pond reservoir sites but there may be no soil material suitable for a dam.

prime farmland

Prime farmland as defined by the U.S. Department of Agriculture is the land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high crop yields if acceptable farming methods are used. Prime farmland produces the highest yields with minimal inputs of energy and money and for farming it results in the least damage to the environment. Prime farmland is of major importance in satisfying the Nation's short- and long-range needs for food and fiber. The supply of high quality farmland is limited and should be used with wisdom and foresight.

Prime farmland is either currently used for producing food or fiber or is available for this use. Urban or built up land or water areas are not included.

Prime farmland usually has an adequate and dependable supply of moisture from precipitation or irrigation. It has favorable temperature and growing season and acceptable reaction. It has few or no rocks and is permeable to water and air. Prime farmland is not excessively erodible or saturated with water for long periods or frequently flooded during the growing season. Slope ranges mainly from 0 to 6 percent.

About 68,000 acres or nearly 23 percent of St. Francois County meets the soil requirements for prime farmland. Areas are scattered throughout the county but most are on the Farmington Plain in soil associations 1, 2, and 7 of the general soil map. Nearly all the row crops and small grain are grown on prime farmland. This land is used for pasture and hay as well.

Some prime farmland has been lost to urban and industrial uses. The loss of prime farmland to other uses puts pressure on marginal lands which generally are more erodible, droughty, and difficult to cultivate, and usually less productive.

Soil map units that make up prime farmland in St. Francois County are listed in this section. This list does not constitute a recommendation for a particular land use. The extent of each map unit is shown in table 4.

The location is shown on the detailed soil maps in the back of this publication. The use and management of the soils is described in the section, Detailed soil map units.

Some areas of Elsah, Haymond, and Wilbur soils may require protection from flooding to qualify as prime farmland. Also, some areas of Auxvasse and Loughboro soils may require drainage. In the following list, soils that are frequently flooded or are naturally wet are noted. Onsite evaluation is necessary to determine if these limitations have been overcome by corrective measures or if some areas of the unit flood less often than once in 2 years during the growing season. In St. Francois County, the naturally wet soils generally have been adequately drained because of the application of drainage measures or because of the incidental drainage that results from farming, roadbuilding, or other kinds of land development.

The soils that meet the requirements for prime farmland are:

- 10A—Ashton silt loam, 0 to 3 percent slopes
- 11A—Auxvasse silt loam, 0 to 3 percent slopes ¹
- 12B—Caneyville silt loam, 2 to 5 percent slopes
- 15B—Crider silt loam, 2 to 5 percent slopes
- 16B—Delassus silt loam, 2 to 5 percent slopes
- 19A—Elsah silt loam, 0 to 3 percent slopes ²
- 23A—Haymond silt loam, 0 to 2 percent slopes ²
- 24B—Hildebrecht silt loam, 2 to 5 percent slopes
- 26B—Jonca silt loam, 2 to 5 percent slopes
- 31A—Loughboro silt loam, 0 to 3 percent slopes ¹
- 34B—Nicholson silt loam, 2 to 5 percent slopes
- 39A—Wilbur silt loam, 0 to 2 percent slopes ²

¹ This soil is prime farmland only in areas where it is adequately drained.

² This soil is prime farmland only where it is protected from flooding or where it is flooded during the growing season less often than once in 2 years.